REMARKS

By the present Amendment, Claims 4, 9-11 and 25 were amended, and Claims 33-53 were cancelled without prejudice, for inclusion in a subsequent divisional patent application. Claims 1-32 remain pending. Claims 1, 9-11 and 25 are independent claims.

The Office Action has been carefully considered, and these amendments and arguments are present in a genuine effort to bring the application into condition for allowance. Reconsideration of the rejection of the claims and allowance of Claims 1-32 is respectfully requested in light of these amendments and arguments.

The Present Invention

The present invention provides an air or gas-powered gun providing a recoil similar to that of a firearm or gun firing a powder propelled projectile – significantly more recoil than would normally be provided through the equal and opposite reaction to the action of the discharge of a pellet. The compressed gas powered gun of the present invention preferably duplicates many other features of a conventional firearm, for example, the sights, the positioning of the controls, and the method of operation. An improved magazine and magazine indexing system contributes to the accuracy of the gun. The trigger assembly may provide for semi-automatic fire or full automatic fire of varying cyclic rates, thereby permitting the gas-powered gun to fire at a cyclic rate approximately duplicating the cyclic rate of a conventional automatic rifle. The combination of these features provides a gas-powered gun that may be utilized as a training alternative to an actual firearm, that may be used safely in a wider variety of locations and training exercises than an actual firearm, and that is significantly less expensive to shoot than an actual firearm.

The Cited Art

U.S. Patent No. 4,116,193 (Chiba) describes a manually operated, pressurized gas gun. This air gun includes a tubular magazine having a spring-biased follower, with the front of the magazine being positioned against a horizontally moving carrier. The carrier defines a hole for receiving a single pellet, and reciprocates between a position wherein the hole is aligned with the magazine, and a second position wherein the hole is aligned with the bore. A bolt reciprocates between a rearward position permitting horizontal movement of the carrier, and a

forward position wherein a pellet picked up by the carrier and aligned with the bore has been pushed forward ahead of the bolt into a chamber. Movement of the bolt and carrier are controlled by a reciprocating operating handle in the form of a forestock. Air from a gas cartridge is permitted to enter a valve chamber until air pressure within the valve chamber is sufficient to overcome the force of the spring holding the valve chamber open, at which point the air pressure closes the valve chamber. When the trigger is pulled, the trigger movement causes a sear to release a hammer, striking the rear portion of a valve rod, opening the valve and permitting the gas therein to expand behind the pellet in the chamber, driving the pellet out of the barrel. Once the pellet is discharged from the barrel, it is necessary to cycle the operating handle to chamber the next pellet from the magazine. As the Examiner correctly notes, every action has an equal and opposite reaction, which would cause the air gun of Chiba to exhibit a very small, virtually imperceptible recoil. There is no mechanism whatsoever disclosed within Chiba for increasing the small, virtually imperceptible recoil up to the substantially larger level of recoil exhibited by a powder propelled firearm.

U.S. Patent No. 4,819,609 (Tippmann) discloses a valve assembly and a firing mechanism including a spring-biased bolt. The bolt is held in its rearward position, against the spring pressure, by the trigger mechanism. The valve assembly includes a tubular valve housing having a valve at each end, with the valves being spring-biased away from each other and towards each end of the valve housing, so that the spring pressure biases each valve against the valve housing, closing the valve. Both the valve housing and the rear valve are reciprocable between a forward and a rearward position. When the trigger is pulled and both released, the bolt travels forward to strike the valve assembly, causing both the rear valve and tubular housing to move forward, thereby opening both the forward and the rear valves within the assembly. Compressed gas escaping through the forward valve pushes the projectile out the barrel. Compressed gas escaping through the rear valve pushes the bolt back to its original position against the forward bias of the bolt spring. A selector switch moves the sear pivot pin between three positions: a safe position, wherein the trigger cannot reach the sear to trip it; a semi-automatic position, wherein the trigger may trip the sear, but the sear slips pass the end of the trigger when the trigger is fully retracted; and full automatic, wherein the trigger holds the sear out of engagement with the bolt for the duration of the trigger pull. As the Examiner correctly notes, the action of discharging a paint pellet from the paint ball gun of Tippmann would create

an equal and opposite reaction. Tippman does not disclose any means for increasing this barely perceptible reaction to the action of firing a pellet to the substantially greater level of recoil generated by a powder propelled firearm, or even the desirability of doing so.

U.S. Patent No. 5,760,328 (Robbins) describes a trigger mechanism for a firearm providing for a selector switch having up to four positions: safe, semi-automatic, limited automatic burst, and full automatic. In the safe position, trigger travel is blocked. In the semi-automatic, limited fully automatic, or full automatic position, trigger travel is permitted, and the movement of a semi-automatic disconnector, a limited burst ratcheting disconnector, and an automatic sear are limited to produce the desired mode of firing. All firing modes use the same trigger travel and cyclic rate.

The Specification

The Examiner objected to various informalities in the specification. All informalities have been corrected according to the Examiner's recommendations.

Rejection of Claims Under 35 U.S.C. § 112

The Examiner objected to Claims 4 and 5 under 35 U.S.C. § 112, second paragraph, as being indefinite. Claim 4 has been amended to indicate that it is dependent from Claim 3. Claim 5 is dependent from Claim 4. Applicant respectfully submits that Claims 4 and 5, as amended, particularly point out and distinctly claim the subject matter recited therein.

Rejection of Claim 1 Under 35 U.S.C. § 102(b) Based on Tippmann

The Examiner rejected Claim 1 under 35 U.S.C. § 102(b) as being anticipated by Tippmann. This rejection is respectfully traversed.

As the Examiner correctly pointed out, Tippmann discloses a gas-powered gun wherein any recoil generated is merely the equal and opposite reaction to the action of the projectile being discharged. As explained above, Tippmann does not disclose any method whatsoever for enhancing the recoil in any manner, much less to enhancing the recoil sufficiently to approximate the recoil of a powder propelled firearm, as recited in Claim 1. Therefore, it is submitted that Tippmann

fails to disclose each and every element recited in Claim 1, and that Claim 1 is in condition for allowance.

Rejection of Claim 1 Under 35 U.S.C. § 102(b) Based on Chiba

The Examiner rejected Claim 1 under 35 U.S.C. § 102(b) as being anticipated by Chiba. This rejection is respectfully traversed.

As the Examiner correctly pointed out, Chiba describes a gas-powered gun generating a recoil solely through the equal and opposite reaction to the action of a projectile being discharged. Chiba does not disclose any method whatsoever for enhancing the recoil, much less a method of enhancing the recoil sufficiently to approximate the recoil of a powder propelled firearm. Therefore, Chiba fails to disclose each and every element recited in Claim 1. Therefore, it is submitted that Claim 1 is in condition for allowance.

Rejection of Claims 2-5, 7, and 8 Under 35 U.S.C. § 102(b)

The Examiner rejected Claims 2-5, 7 and 8 under 35 U.S.C. § 102(b) as being anticipated by Tippmann. This rejection is respectfully traversed.

Applicant initially points out that Claims 2-5, 7 and 8 are all dependent from Claim 1. As explained above, Tippmann fails to teach or suggest each and every element of Claim 1.

Furthermore, Claim 7 recites a buffer assembly dimensioned and configured to bias the bolt towards its forward position, and to provide a recoil for a shooter. Nothing within Tippmann teaches or suggests anything that is specifically dimensioned and configured to provide a recoil to a shooter. Any recoil generated by Tippmann would be nothing more than the equal and opposite reaction of a projectile being discharged, with some possible additional recoil being generated by the movement of the bolt. However, such recoil would be imperceptible to the shooter, and Tippmann fails to teach or suggest anything that would enhance such recoil to the level typically generated by a powder-propelled firearm, and furthermore fails to even disclose the desirability of producing such recoil in an air-powered gun.

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Claim 8 recites a spring-biased air-resistance bolt driver. Tippmann does not teach or suggest any such bolt driver. Although the Examiner cites the bolt or slide, reference number 39 in Tippmann, as a bolt driver, part 39 cannot be a bolt

driver simply because it is the bolt, and not a component fitting behind the bolt for the purpose of driving the bolt forward.

Therefore, Claims 2-5, 7 and 8 are submitted to be in condition for allowance.

Rejection of Claims 17-24 and 27-32 Under 35 U.S.C. § 102

The Examiner rejected Claims 17-24 and 27-32 under 35 U.S.C. § 102(b) as being anticipated by Chiba. This rejection is respectfully traversed.

Initially, Applicant notes that Claims 17-24 and 27-32 are all either directly or indirectly dependent from Claim 1, and that Chiba fails to teach or suggest each and every element recited in Claim 1, as explained above.

Furthermore, Chiba fails to teach or suggest a magazine assembly as recited in Claim 17. Claim 17 recites a magazine assembly comprising: a magazine having a plurality of chambers, each of said chambers being dimensioned and configured to be axially aligned with a barrel, and to receive a projectile there within; means for automatically indexing the magazine upon the cycling of a bolt; and means for automatically aligning one of the chambers with the barrel upon completion of indexing. Contrast this with Chiba, wherein the magazine is a hollow tube with a spring-biased follower. A carrier mechanism receives a pellet from the magazine, and transfers it in front of the bolt, which then pushes the pellet from the carrier and into the chamber. As Chiba does not provide any special definition of "chamber," it has its ordinary meaning. For the Examiner's convenience, Applicant has included a photocopy of page 372 of *Webster's Third New International Dictionary*, showing the meaning of the term "chamber", as applied to a firearm. These possible meanings are:

> a) a detached plug containing the charge inserted at the breech of heavy firearms; b) a short cannon that stood on its breech and that was used for celebrations and in the theater; c) the part of the bore of a gun that holds the charge; d) the part of a firearm tooled to receive the cartridge: as (1) any of the barrels containing the cartridge in an old revolver; (2) a compartment in the cartridge cylinder of a revolver.

The chamber of Chiba is therefore, referring to Figure 1 of Chiba, at the location in the bore 2 containing the pellet 4. Chiba therefore fails to disclose a plurality of chambers (it discloses a single chamber), each of the chambers being dimensioned and configured to be axially aligned with a barrel (the chamber is part of the barrel and is therefore always aligned with the barrel), means for automatically indexing the

magazine upon the cycling of a bolt (tubular magazines do not index), or means for automatically aligning one of the chambers with the barrel upon the completion of indexing (not only do tubular magazines not index, but there need not be any means for aligning a chamber with the barrel when the chamber is part of the barrel).

Claim 18 further recites that the magazine is a cylinder. For the Examiner's convenience, Applicant has included a photocopy of page 565 of *Webster's Third New International Dictionary*, showing the meaning of the term "cylinder", as applied to a firearm. The relevant definition is "the turning chambered breach of a revolver." The magazine of Chiba is a tubular magazine having a spring-biased follower. Although the magazine of Chiba is admittedly in the shape of a cylinder according to the geometric definition of that term, the magazine is also a completely different type of magazine and that which is commonly known as a cylinder within the field of firearms.

Claim 19 further recites a magazine tube dimensioned and configured to align with one of the magazine's chambers and to contain projectiles, the magazine tube containing a spring-biased follower. Claim 19 therefore recites two separate magazines: a tubular magazine and a cylinder-type magazine. Chiba only discloses one type of magazine: a tubular magazine. As explained above, the tubular magazine of Chiba does not feed into one of a plurality of chambers on a rotating cylinder, from which the projectile is fired, but instead feeds into the single aperture of a sliding carrier, from which the pellet is then transferred by the bolt into the chamber from which it is fired.

Claim 20 recites a pawl carrier reciprocating between a first side position and a second side position, and a pawl dimensioned and configured to engage one of the chambers when the pawl carrier is in the first side position, and one of the chambers when the pawl carrier is in the second side position, the pawl being biased towards the magazine. The pawl and pawl carrier of Claim 20 are described and claimed as the means of rotating the cylinder. Contrast this with Chiba, column 7, lines 13-35, describing a pawl that enters the tubular magazine to prevent pellets from exiting the magazine at an inappropriate time.

Claim 21 recites the pawl comprising a pusher surface dimensioned and configured to index the magazine when the pawl carrier moves from the first side position to the second side position, and a ramp surface dimensioned and configured to permit the pawl to exit one of the chambers when the pawl carrier moves from the

second side position to the first side position, and to engage another of the chambers when the pawl carrier reaches the first side position. Claim 21 thereby further describes the operation of the pawl and pawl carrier. Upon the rearward stroke of the bolt and operating rod of the present invention, the pawl's pusher surface will push the cylinder so that it rotates to index by one position. Upon a forward movement of the bolt and operating rod, the pawl will exit the chamber within which it was presently located, and enter the next chamber, in preparation for the next cylinder indexing operation. It is necessary for the pawl to engage and disengage the cylinder in this manner because such a cylinder will not function unless it rotates only in one direction. Contrast this with Chiba, column 7, lines 13-35, which does not describe any means for using the pawl of Chiba to index a cylinder, but instead merely engages and disengages a stationary tubular magazine.

Additionally, Claims 18-24 are all either directly or indirectly dependent from Claim 17.

Therefore, Claims 17-24 are submitted to be allowable over Chiba.

Claim 27, which, along with Claims 28-32 is also dependent from Claim 17, recites that the magazine is an elongated sliding member, with the sliding member having a plurality of indexing chambers. Contrast this with Chiba, which discloses a tubular magazine, and a sliding carrier with a single chamber for transferring a pellet from the magazine to a position wherein it may be moved by the bolt into the chamber.

Claim 28 recites a pawl carrier reciprocating between a first side position and a second side position, and a pawl dimensioned and configured to engage one of the chambers when the pawl carrier is in the first side position, and one of the chambers when the pawl carrier is in the second side position, the pawl being biased towards the magazine. The pawl and pawl carrier of Claim 28 are described and claimed as the means of rotating the cylinder. Contrast this with Chiba, column 7, lines 13-35, describing a pawl that enters the tubular magazine to prevent pellets from exiting the magazine at an inappropriate time.

Claim 29 recites the pawl comprising a pusher surface dimensioned and configured to index the magazine when the pawl carrier moves from the first side position to the second side position, and a ramp surface dimensioned and configured to permit the pawl to exit one of the chambers when the pawl carrier moves from the second side position to the first side position, and to engage another of the chambers

when the pawl carrier reaches the first side position. Claim 29 thereby further describes the operation of the pawl and pawl carrier. Upon the rearward stroke of the bolt and operating rod of the present invention, the pawl's pusher surface will push the cylinder so that it rotates to index by one position. Upon a forward movement of the bolt and operating rod, the pawl will exit the chamber within which it was presently located, and enter the next chamber, in preparation for the next cylinder indexing operation. It is necessary for the pawl to engage and disengage the cylinder in this manner because such a cylinder will not function unless it rotates only in one direction. Contrast this with Chiba, column 7, lines 13-35, which does not describe any means for using the pawl of Chiba to index a cylinder, but instead merely engages and disengages a stationary tubular magazine.

Therefore, Claims 17-32 are submitted to be in condition for allowance.

Rejection of Claim 6 Under 35 U.S.C. § 103

The Examiner rejected Claim 6 under 35 U.S.C. § 103(a) as being obvious in light of Tippmann in view of ordinary skill in the art. This rejection is respectfully traversed. The floating mass within the bolt of the present invention, which the Examiner claims would be obvious to one skilled in the art in light of Tippmann, is one of the means by which an air gun of the present invention provides the shooter with a recoil approximating that of a firearm. The combination of the mass of the bolt and the mass of the bolt driver (which always moves with the bolt), reciprocating back and forth creates this recoil. There is nothing whatsoever within Tippmann that describes a means for increasing the recoil of the paint ball gun described within Tippmann to the level of that of a powder propelled firearm, nor is there any teaching within Tippmann that even remotely suggests the desirability of doing so. Furthermore, the floating mass within the bolt contributes to the ability of the present invention to fire in full automatic mode at a low cyclic rate by permitting the bolt to momentarily catch on the sear until the momentum of the floating mass drives the bolt forward off the sear, something that is also not described in Tippmann.

Therefore, Claim 6 is submitted to be in condition for allowance.

Rejection of Claims 12 and 13 Under 35 U.S.C. § 103

The Examiner rejected Claims 12 and 13 under 35 U.S.C. § 103(a) as being unpatentable over Tippmann in view of Robbins. This rejection is respectfully traversed.

Tippmann discloses a trigger mechanism having a selector through which semi-automatic or full automatic firing is selected by moving the sears pivot pin.

Robbins discloses a selector that either resists trigger movement in the safe position, or permits trigger movement in either the semi-automatic, burst, or full automatic mode. Trigger movement within the semi-automatic, burst, and full automatic mode is the same distance within the trigger mechanism of Robbins. As explained above, the selector switch selectively permits or resists movement of a semi-automatic disconnector, a limited burst ratcheting disconnector, and/or an automatic sear to produce the desired mode of firing.

Nothing within Tippmann, Robbins or the combination thereof teaches or suggests a trigger mechanism wherein the selector switch includes four different trigger-engaging surfaces, each surface permitting a different distance of trigger movement, and each surface being selectively positionable to engage the trigger, as claimed in claim 12. Furthermore, nothing within Tippmann, Robbins or the combination thereof teaches or suggests a trigger mechanism that may be used to select safe, semi-automatic, full automatic fire at a low cyclic rate, or full automatic fire at a high cyclic rate, by controlling the distance with which the trigger moves when it is depressed, as recited in claim 13.

Therefore, Claims 12 and 13 are submitted to be in condition or allowance.

Rejection of Claims 14-16 Under 35 U.S.C. § 103(a)

The Examiner rejected claims 14-16 under 35 U.S.C. § 103(a) as being obvious in light of Tippmann in view of Chiba. This rejection is respectfully traversed.

Initially, it is noted that Claims 14-16 are all either directly or indirectly dependent from Claim 12, the allowability of which is discussed above. Furthermore, Claims 14-16 further specify the structure and operation of the sear and sear trip of the present invention.

Chiba describes a pump action air gun, wherein chambering a round is accomplished by cycling a pump handle serving as the forestock. It was explained above how the combination of Tippmann and Robbins fails to teach or suggest a trigger mechanism of the present invention. There is nothing within the design of a pump action firing mechanism which, when combined with Tippmann, Robbins, or any combination thereof, would teach or suggest the trigger mechanism as recited in Claim 12, from which Claims 14-16 depend.

Therefore, Claims 14-16 are submitted to be in condition for allowance.

Allowable Subject Matter

Applicant notes with appreciation that the Examiner indicated that Claims 9-11, 25, and 26 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 9 has been rewritten in independent form, including the limitations of Claims 1, 2, 7, and 8. Claims 10 and 11 have each been rewritten in independent form, including the limitations of Claims 1, 2, and 7. Claim 25 has been rewritten in independent form including the limitations of Claims 1 and 17. Claim 26 is dependent from Claim 25.

Therefore, the allowed, objected to claims are now submitted to be in condition for allowance.

CONCLUSION

For the above reasons, Claims 1-32 are submitted to be in condition for allowance. Reconsideration of all rejections and allowance of these claims is therefore respectfully requested. If the Examiner believes that there are any additional issues related to allowance of these claims, the Examiner is invited to telephone Applicants' representative so that these issues may be resolved.

Respectfully submitted,

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VERSION TO SHOW CHANGES MADE

In the Specification:

On page 3, line 20:

The trigger assembly includes a trigger having a finger-engaging portion and a selector-engaging portion, a selector switch, a trigger bar, a sear trip, and a sear. The selector switch will preferably [by] be cylindrical, having three bearing surfaces corresponding to safe, semi-automatic fire, and full automatic fire at a low cyclic rate, and a channel corresponding to full automatic fire at a high cyclic rate. These surfaces and channel of the selector bear against the selector engaging portion of the trigger, permitting little or no trigger movements if safe is selected, and increasing trigger movement for semi-automatic fire, low cyclic rate full automatic fire, and high cyclic rate full automatic fire, respectively. The sear is mounted on a sliding pivot, and is spring-biased towards a rearward position. The sear has a forward end for engaging the sear trip, and a rear end for engaging the bolt. The bolt preferably contains a floating mass, and reciprocates between a forward position and a rearward position. Although the bolt is spring-biased towards its forward position, the bolt will typically be held in its rearward position by the sear except during firing. The valve assembly includes a reciprocating housing containing a stationary forward valve poppet, a sliding rear valve poppet, and a spring between the front and rear valve poppets. The spring pushes the rear valve poppet rearward, causing the rear poppet to bear against the housing, thereby closing the rear valve and pushing the housing rearward. Pushing the housing rearward causes the housing to bear against the front valve poppet, thereby closing the front valve.

On page 14, line 25:

An alternative embodiment of a magazine assembly 108 is illustrated in Figure 15. The cylinder 110 has been replaced by an elongated bar 146, having a plurality of chambers 148, indexing holes 150, and flutes 152 along its bottom surface. At least one spring-biased bearing 116 engages a flute 152 to align the chambers 148 with the barrel 14. A pair of slots 154, 156 [154] permit the rod 146 to be inserted into the rifle 10 by accommodating the pawl 126. As will be seen below, indexing of the magazine 146 is very similar to the indexing of the cylinder 110.

On page 15, line 6:

Referring to Figures 18-21, the buffer system 158 is illustrated. A preferred buffer system 158 includes an air piston bolt driver 160, a floating mass bolt driver 162 having a floating mass 164 therein, and a spring 166 disposed therebetween. The air piston bolt driver may preferably be made of two pieces, a forward portion 168 and rear portion 170. The buffer system 158 is located directly behind the bolt 38, and is housed within a buffer tube 172 within the shoulder stock 18. Depending on the length of the buffer tube 172, the forward portion 168 of the air resistance bolt driver may either be attached or removed from the rear portion 170 of the air piston bolt driver [158] 160.

On page 16, line 4:

To use the rifle 10, a gas cartridge 28 is first secured to the compressed gas channel 104. At least one gas cartridge 28 must be used, and more than one may be used. If desired, a pressure gauge 30 may also be connected to the compressed gas channels 104. The gas selected may be either compressed air, or any compressed gas commonly used for air guns. One example is carbon dioxide. Next, projectiles are loaded into the magazine. If a rotary magazine or cylinder 110 is used, any projectile suitable for use in an air gun may be used, including spherical projectiles, conventional pellets, darts, etc. The cylinder 110 is loaded by first depressing the bearing 116 so that it does not block removal of the cylinder 110, and then pushing forward on the reloading tab 130, thereby retracting the pawls end 132 from the chamber. The cylinder 110 is now free to exit the rifle 10. The projectiles are pushed into place through the front portion of the chambers, and secured with friction. After loading all six chambers, the cylinder 110 may be inserted back into place within the rifle 10, after which the shooter re-engages the bearing 116 with the magazine flute 114. If a tubular magazine is used, preferred projectiles include spherical projectiles. These may be loaded by first retracting the follower 142 using a finger tab secured to the follower (not shown and well known in the art), opening the loading gate 144, and pouring spherical projectiles into the magazine tube. Releasing the follower [102] 142 will push the first spherical projectile into the chamber 112 aligned with the tubular magazine 140.

On page 17, line 10:

Compressed air will be supplied from the compressed air container 28, through the compressed air channels 104 and hose 102 to the center portion of the valve assembly 40 between the forward valve 88 and rear valve 90. Before firing, the trigger mechanism 36, valve assembly 40 and bolt 38 are in the positions illustrated in Figure 4. The bolts 38, although biased forward by pressure from the spring 166, is held in its rear position by the rear end 80 of the sear 74 engaging the notch 82. Pressure from the spring 75 holds the sear 74 in this position, forward pressure from the bolt 38 against the sear 74 pushes the sear towards its forwardmost position on the sliding pivots 76. The trigger spring 44 holds the trigger 26 in its forwardmost position. The selector 46 may be rotated to the appropriate position, corresponding to safe, semi-automatic, or full automatic at a low or high cyclic rate. Figure 5 depicts the location of the parts when the trigger is pulled in semi-automatic mode. Trigger 26 has been pulled rearward until the selector-engaging portion 50 engages the surface 58 of the selector 46. The trigger bar 64 moves rearward, thereby pivoting the end 68 of the sear's trip 66 upward so that the radiused surface 70 pushes the sear's forward end 78 upward, thereby pivoting the sear's back end 80 downward, releasing the bolt 38 to travel forward. During the forward travel of the bolt 38, the operating rod 118 moves from the rearward position depicted in Figures 10 and 13 to the forward position depicted in Figures 9 and 14. The pawl carrier 124 is thereby moved from its right side position of Figure 10 and 13 to its left side position of Figures 9 and 14. The pawl's end 132 is pushed out of the chamber 112 in the one o'clock position when viewed from the rear (Figures 10 and 13) to the eleven o'clock position of Figures 9 and 14, without rotating the cylinder 110. When the bolt 38 reaches its forwardmost position, air pressure between the bolt 38 and valve housing 86, enhanced by the O-rings 84 and 106, causes the valve housing 86 to move forward, thereby opening the forward valve 88. This releases compressed air to a position immediately behind the projectile in the chamber 112 aligned with the barrel 14, thereby discharging the projectile. At the same time, the bolt 38 strikes the rear valve 90, thereby moving the rear valve 90 forward to open the rear valve 90, thereby releasing compressed air to the bolt 38. The bolt 38 is thereby pushed to its rearward position as the pressure from the compressed air overcomes the bias of the spring 166. At the same time, the operating rod 118 is pulled from its forward position of Figures

9 and 14 to its rearward position of Figures 10 and 13. The pawl carrier [24] 124 is thereby moved from its left most position to its right most position. As the pawl carrier 124 moves, the surface 134 of the pawl 126 engages the wall of a cylinder 112, thereby pushing the cylinder 110 so that the next chamber 112 is aligned with the barrel 14. The bearing 116 is briefly biased out of the flute 114, engaging the next flute 114 once the appropriate 112 chamber is aligned with the barrel 14. The above portion of the firing sequence, although based on semi-automatic fire, is identical for full automatic fire. The subsequent portion of the firing sequence changes depending on whether semi-automatic or full automatic fire is selected, and the rate of full automatic fire selected.

In the Claims:

4. (Amended) The gas-powered gun according to claim [4] 3, further comprising a spring dimensioned and configured to bias said housing and said rear valve towards their rear positions.

9. (Amended) [The gas-powered gun according to claim 8,] A gas-powered gun, comprising:

a bolt reciprocating between a forward position and a rearward position, said bolt being biased towards its forward position, said bolt having a gas-receiving surface;

a buffer assembly dimensioned and configured to bias said bolt towards its forward position, and to provide a recoil for a shooter, said buffer assembly comprising a spring-biased air resistance bolt driver; [wherein] said air resistance bolt driver comprising[es] two detachable components, dimensioned and configured for use within buffer tubes having at least two different lengths;[.]

a valve assembly dimensioned and configured to discharge compressed gas both forward into a firing chamber and rearward onto said bolt face when said bolt reaches its forward position; and

the gas-powered gun being structured to simulate a recoil approximating a recoil generated by a gun firing a powder-propelled projectile.

10. (Amended) [The] A gas-powered gun [according to claim 7, wherein], comprising:

a bolt reciprocating between a forward position and a rearward position, said bolt being biased towards its forward position, said bolt having a gas-receiving surface;

a buffer assembly dimensioned and configured to bias said bolt towards its forward position, and to provide a recoil for a shooter, said buffer assembly comprising a spring-biased air resistance bolt driver; said buffer assembly comprising[es] a spring-biased floating mass bolt driver;[.]

a valve assembly dimensioned and configured to discharge compressed gas both forward into a firing chamber and rearward onto said bolt face when said bolt reaches its forward position; and

the gas-powered gun being structured to simulate a recoil approximating a recoil generated by a gun firing a powder-propelled projectile.

11. (Amended) [The] A gas-powered gun [according to claim 7, wherein said buffer assembly comprises], comprising:

a bolt reciprocating between a forward position and a rearward position, said bolt being biased towards its forward position, said bolt having a gas-receiving surface;

a buffer assembly dimensioned and configured to bias said bolt towards its forward position, and to provide a recoil for a shooter, said buffer assembly comprising a spring-biased air resistance bolt driver said buffer assembly comprising;

an air resistance bolt driver;

a floating mass bolt driver; and

a spring disposed therebetween;[.]

a valve assembly dimensioned and configured to discharge compressed gas both forward into a firing chamber and rearward onto said bolt face when said bolt reaches its forward position; and

the gas-powered gun being structured to simulate a recoil approximating a recoil generated by a gun firing a powder-propelled projectile.

25. (Amended) [The] A gas-powered gun [according to claim 17, wherein] , comprising:

a magazine assembly, comprising:

a magazine having a plurality of chambers, each of said chambers being dimensioned and configured to be axially aligned with a barrel, and to

receive a projectile therewithin,[;] said magazine including [includes] an exterior surface having a plurality of flutes, with each of said flutes corresponding to one of said chambers; [and]

means for automatically indexing said magazine upon the cycling of a bolt; and

[said] means for automatically aligning one of said chambers with said barrel upon completion of indexing, including [comprise] a spring-biased bearing dimensioned and configured to engage one of said plurality of flutes[.]; and

the gas-powered gun being structured to simulate a recoil approximating a recoil generated by a gun firing a powder-propelled projectile.